

blocks into one or more groups, based on a value of the motion vector detected by said
5 interframe prediction circuit;

a DC component based grouping section which classifies the plurality of
blocks into one or more groups, based on the DC components of each of the plurality of
blocks which are calculated by said orthogonal transformation circuit;

a weighting coefficient calculation circuit which calculates a weighting
10 coefficient for determining the quantization step width for each of the plurality of blocks;
and

a quantization step width calculation circuit which calculates the quantization
step width based on the weighting coefficient calculated by said weighting coefficient
calculation circuit, and

15 wherein said weighting coefficient calculation circuit calculates a first weighting
coefficient for the one or more groups classified by said motion vector based grouping
section, calculates a second weighting coefficient for the one or more groups classified by
said DC component based grouping section, and calculates a weighting coefficient for
determining the quantization step width based on one or two weighting coefficients
20 selected from the first and second weighting coefficients, using the motion vector
detected by said motion prediction circuit.

12. The image encoder according to claim 11, further comprising
a frame memory which stores the input image frame which has been divided into the
plurality of blocks by said frame divide circuit, and

wherein said motion prediction circuit compares each of the plurality of blocks with
5 blocks included in a previously-input image frame stored in said frame memory so as to
detect the motion vector.

13. The image encoder according to claim 11, wherein said weighting coefficient
calculation circuit:

sets the first weighting coefficient as a weighting coefficient for determining the

quantization step width, in a case where the motion vector is detected by said motion
5 prediction circuit; and

sets the second weighting coefficient as a weighting coefficient for determining the
quantization step width, in a case where the motion vector is not detected by said motion
prediction circuit.

14. The image encoder according to claim 11, wherein

said weighting coefficient calculation circuit sets a product of the first and second
weighting coefficients as a weighting coefficient for determining the quantization step
width, in a case where the motion vector is detected by said motion prediction circuit.

15. The image encoder according to claim 11, wherein

said weighting coefficient calculation circuit calculates the first weighting
coefficient, based on number of blocks included in the one or more groups classified by
said first grouping section.

16. The image encoder according to claim 11, wherein

said weighting coefficient calculation circuit calculates the second weighting
coefficient based on a distance between center of each block, included in each group of
the one or more groups classified by said second grouping section, and center of the input
5 image frame.

17. The image encoder according to claim 11, wherein:

said motion vector based grouping section classifies the plurality of blocks into
groups, in such a way that each of the groups forms a continuous portion of the input
image frame; and

5 said DC component based grouping section classifies the plurality of blocks into
groups, in such a way that each of the groups forms a continuous portion of the input
image frame.

18. The image encoder according to claim 11, wherein:

said weighting section includes a weighting coefficient re-calculation circuit which

re-calculates a weighting coefficient using the first and second weighting coefficients calculated by said weighting coefficient calculation circuit and each of a plurality of 5 previous weighting coefficients, and

said quantization step width calculation circuit determines the quantization step width based on the re-calculated weighting coefficient.

19. The image encoder according to claim 11, further comprising:

an encoding circuit which encodes the data quantized by said quantization circuit and data representing the motion vector detected by said motion prediction circuit into a variable-length code;

5 a transmission buffer which stores the data which is encoded into the variable-length code by said encoding circuit; and

a buffer storage amount checking circuit which checks an amount of data stored in said transmission buffer, and

wherein said quantization step width calculation circuit calculates the quantization 10 step width based on the data amount checked by said buffer storage amount checking circuit and the weighting coefficient for determining the quantization step width.

20. A computer readable recording medium which records a program for controlling a computer to execute:

dividing an input image frame into a plurality of blocks;

detecting a motion vector of each of the plurality of blocks;

5 classifying the plurality of blocks into one or more groups, according to one or two grouping method selected from motion vector based grouping based on the value of the detected motion vector and DC component based grouping based on DC components of brightness and color information of each block;

calculating a first weighting coefficient of the one or more groups in a case where 10 the plurality of blocks are classified according to the motion vector based grouping, and calculating a second weighting coefficient of the one or more groups in a case where the